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(54) **REAL-TIME GLOBAL FUND TRANSFERS**

(57) **ABSTRACT**

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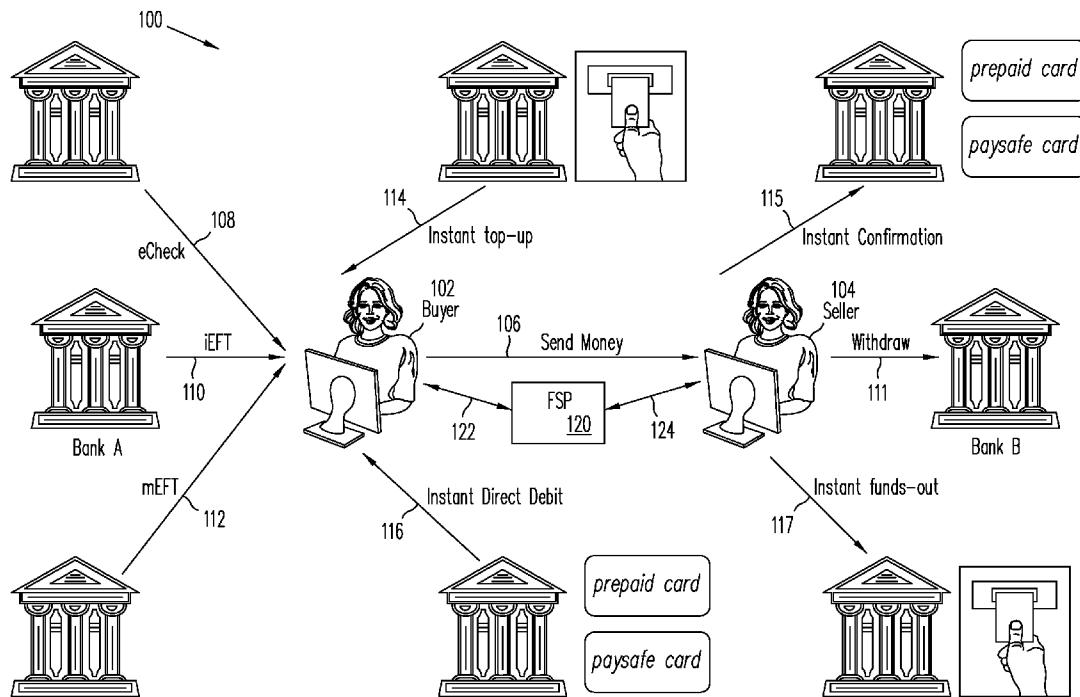
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Embodiments for real-time global bank funds transfers include a new payment system for real-time global bank funds transfer. A funds transfer network and method allow global real-time fund transfers among banks. The new funds transfer service is much faster than Society for Worldwide Interbank Financial Telecommunication network (SWIFT-Net) and much cheaper than real-time gross settlement systems (RTGS). In one or more embodiments, a Financial Service Provider (FSP) has accounts or agreements with Bank A and Bank B, for example. A first user with an account at Bank A requests a fund transfer to a second user at Bank B. The request goes through the FSP, which can confirm the first user. If confirmed, the FSP sends funds to Bank B instantaneously, so that the second user receives the money right away. The first user does not "see" the FSP at all, but instead makes the payment through his own bank (e.g., Bank A) to another bank (e.g., Bank A). The FSP then waits the standard 3-5 days for money from Bank A (e.g., settlement of transaction).



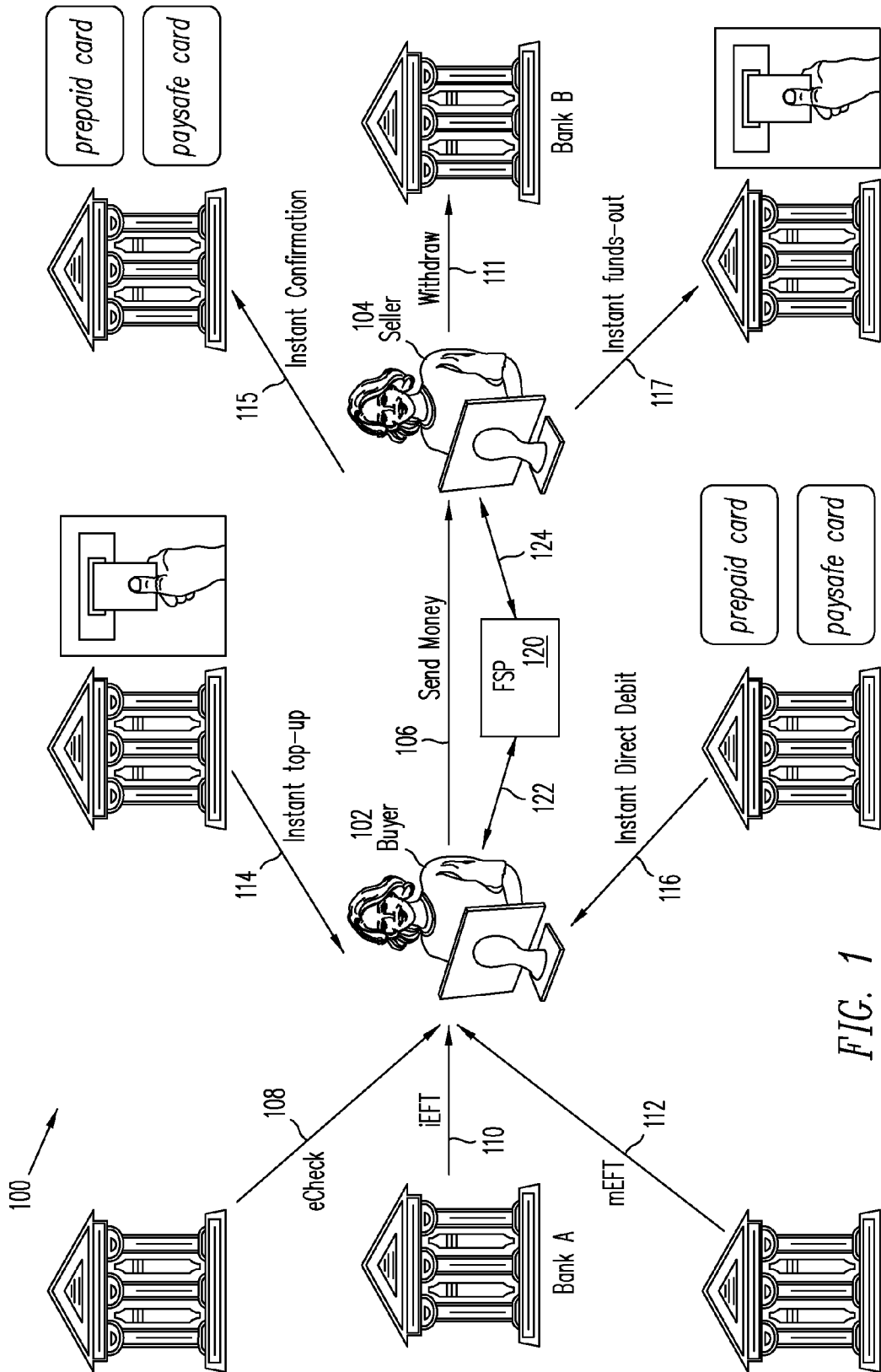


FIG. 1

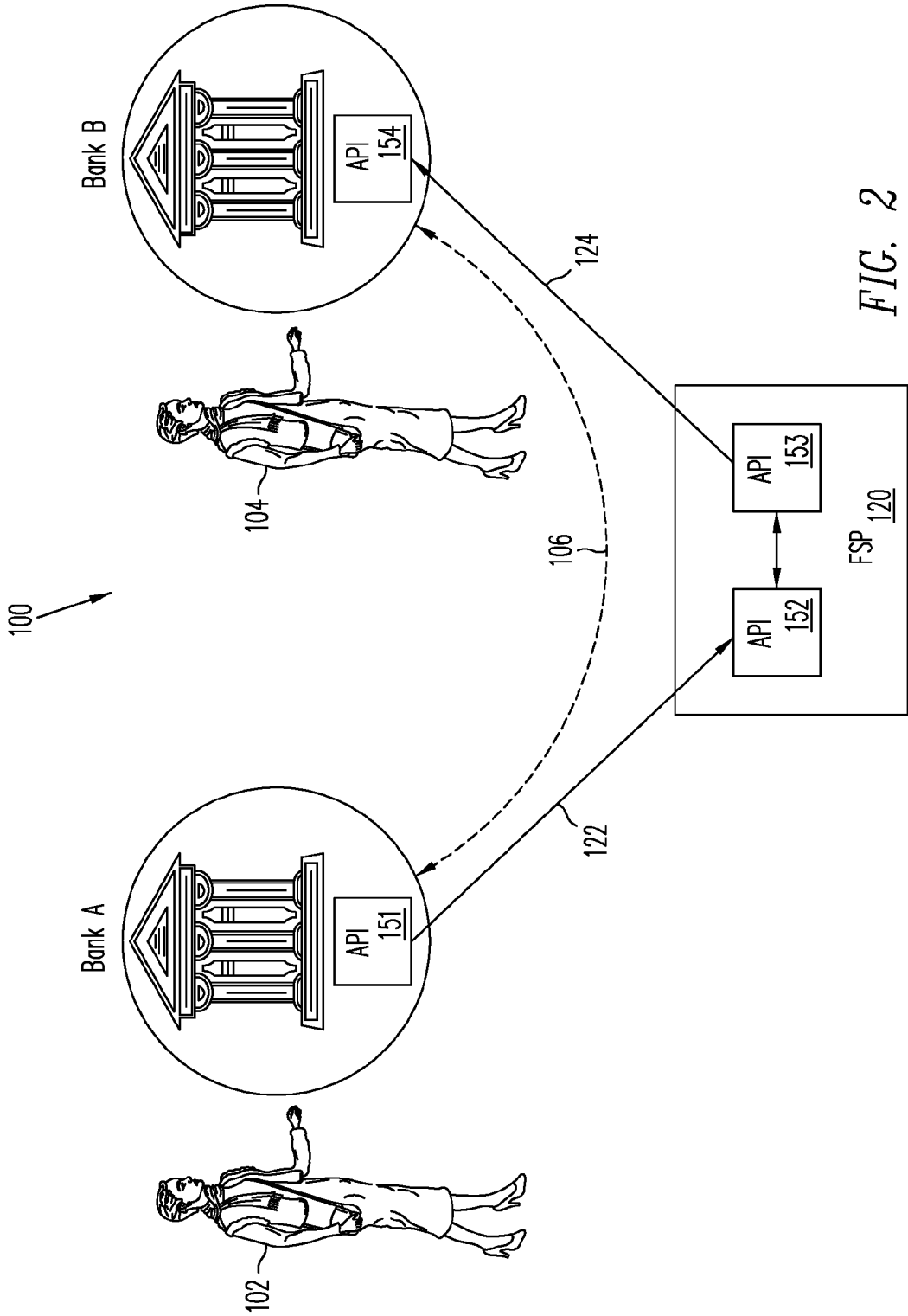


FIG. 2

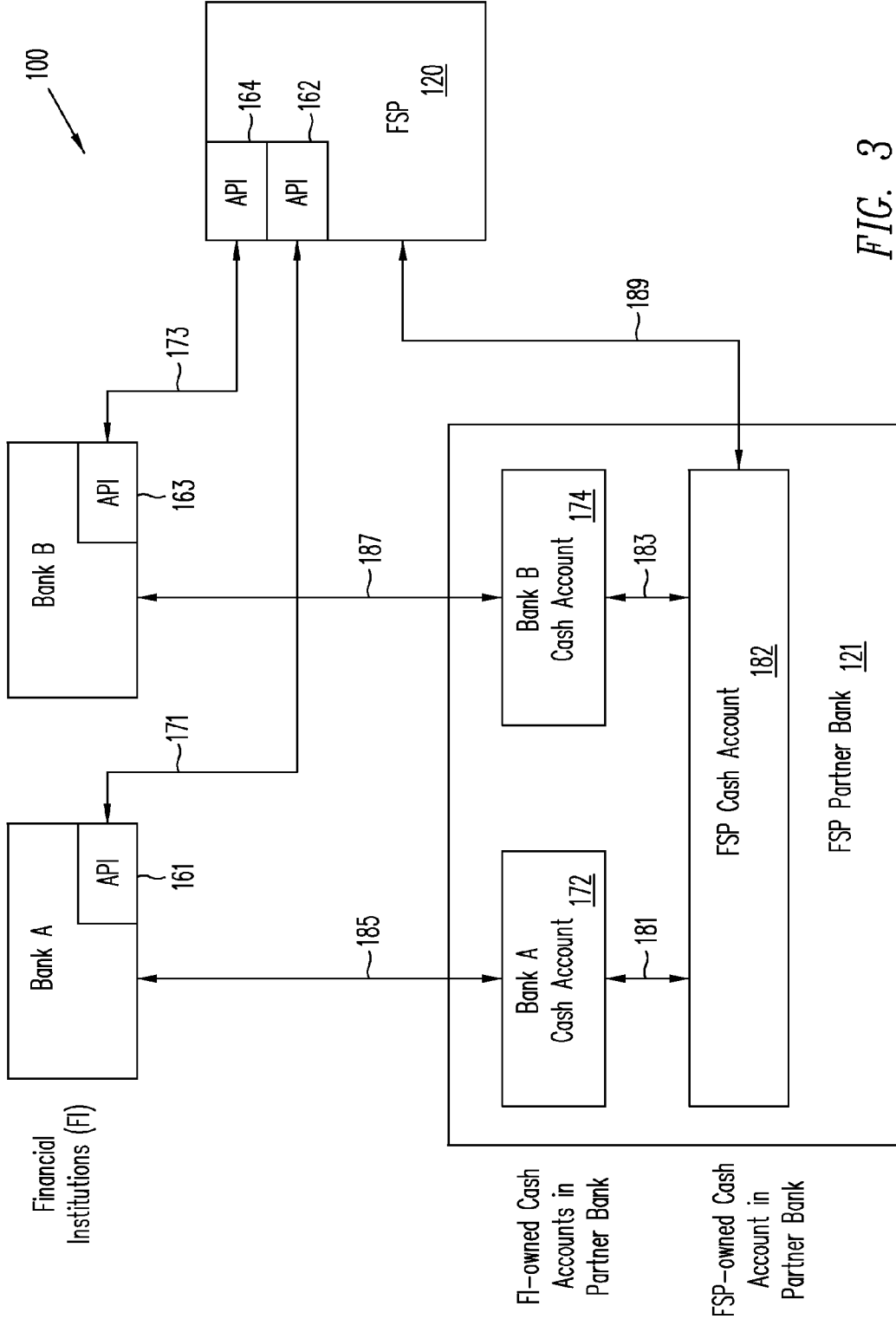


FIG. 3

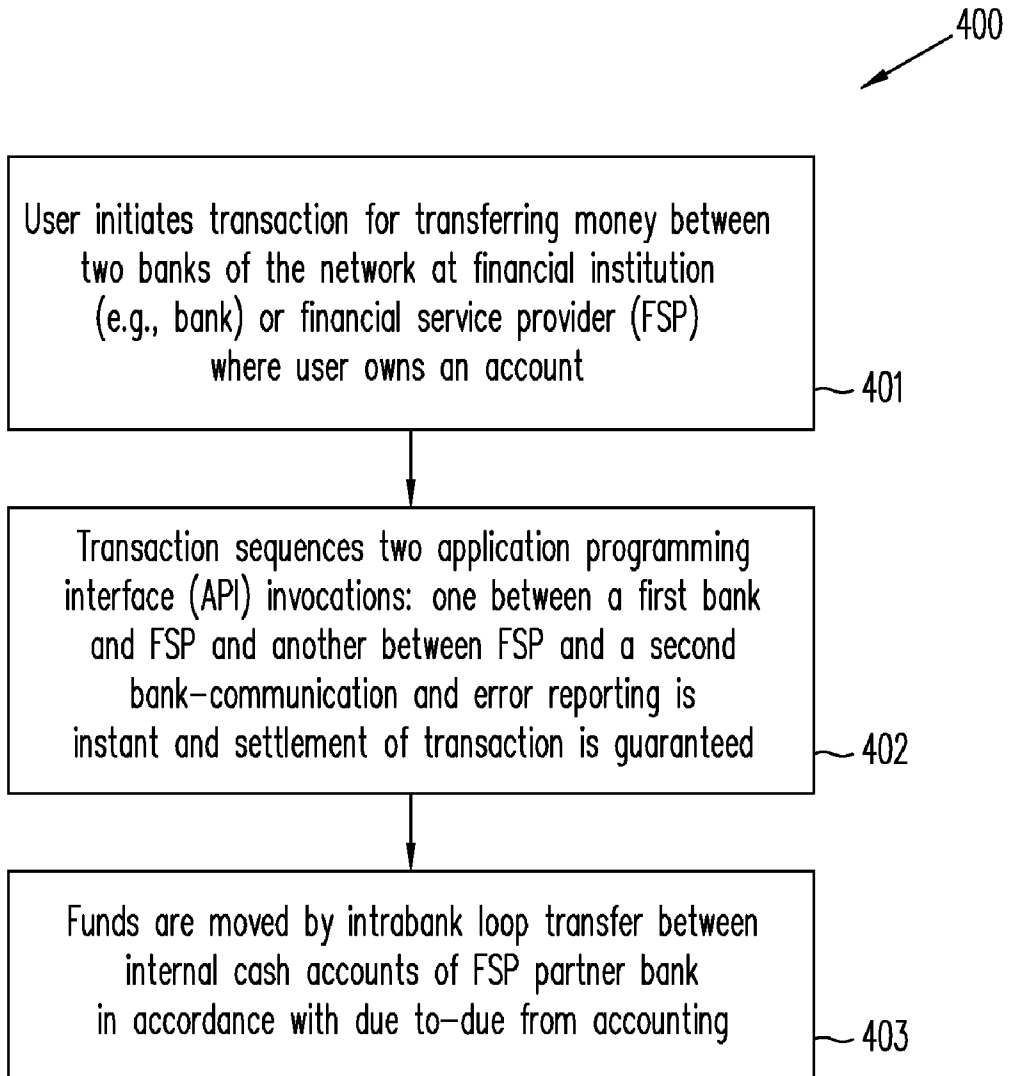


FIG. 4

REAL-TIME GLOBAL FUND TRANSFERS

BACKGROUND

[0001] 1. Technical Field

[0002] Embodiments of the present invention generally relate to methods and systems for facilitating financial transactions and, more particularly, to enabling a global network for providing instant bank fund transfers that is economical for low-value transactions.

[0003] 2. Related Art

[0004] The International Standards Organization (ISO) is a worldwide federation of national standards bodies. The ISO International Standard ISO 20022, “Universal Financial Industry Message Scheme”, is intended to provide the financial industry with a common platform for the development of messages in a standardized XML (Extensible Markup Language) syntax, using: 1) a modeling methodology (based on UML—Unified Modeling Language) to capture in a syntax-independent way financial business areas, business transactions and associated message flows; and 2) a set of XML design rules to convert the messages described in UML into XML schemas. This flexible framework allows communities of users and message development organizations to define message sets according to an internationally agreed approach and to migrate to the use of common XML-based syntax.

[0005] Society for Worldwide Interbank Financial Telecommunication (SWIFT) provides a global banking network (SWIFTNet) system for funds transfers between banks that is generally economical for individual users but requires a few business days, typically three, for the settlement of transactions, e.g., fund transfers, in which the recipient of funds may experience delay in the funds becoming available for use.

[0006] Real-time gross settlement systems (RTGS) are funds transfer systems where money is moved from one bank to another in “real-time” and on “gross” basis. Settlement in “real time” means the payment transaction is not subjected to any waiting period; the transactions are settled as soon as they are processed. Settlement on “gross” basis means each transaction is settled on a one-to-one basis without netting or grouping with any other transactions. In general, RTGS, typically used by companies, organizations, and institutions, is the fastest possible way to transfer money. Once processed, payments are final and irrevocable, but also requires a significant fee from the user. RTGS systems may vary from country to country and is usually maintained and controlled by the Central Bank of a country. For example, Clearing House Automated Payments System (CHAPS) is used in the United Kingdom, while Fedwire is used in the United States. Compared, for example, to SWIFTNet, the RTGS system is suited for low-volume, high-value transactions, and thus may be prohibitively expensive for individual users.

SUMMARY

[0007] According to one or more embodiments of the present invention, methods and systems for real-time global bank funds transfers include a new payment system for real-time global bank fund transfers, a funds transfer network, and a method to allow global real-time fund transfers among banks. In one or more embodiments, a Financial Service Provider (FSP) has accounts or agreements with, for example, Bank A and Bank B. A first user with an account at Bank A makes a request for a fund transfer to a second user at Bank B. The request goes through the FSP, which can confirm the first

user. If confirmed, the FSP sends funds to Bank B instantaneously, so that the second user receives the money right away. The first user does not “see” the FSP at all, but instead makes the payment through his own bank (e.g., Bank A) to another bank (e.g., Bank B). The FSP then waits the standard 3-5 days for money from Bank A (e.g., settlement of transaction).

[0008] In one or more embodiments, a system includes: a first cash account managed by a computer at a partner bank of a financial service provider (FSP) and owned by the FSP; a second cash account managed by a computer at the partner bank of the FSP and owned by a financial institution; and an application programming interface (API) for communication of financial transactions between the partner bank of the FSP and the financial institution so that instant funds transfer between the partner bank and the financial institution is accomplished via the API and internal transactions between the first cash account and the second cash account.

[0009] In another embodiment, a method includes: maintaining a first cash account, owned by a financial service provider (FSP), at a partner bank; maintaining a second cash account, owned by a financial institution, at the partner bank; invoking an application programming interface (API) for transfer of funds between the financial institution and the partner bank; and accomplishing instant funds transfer between the partner bank and the financial institution via the API and internal transactions in the partner bank between the first cash account and the second cash account.

[0010] In a further embodiment, a computer program product comprises a computer readable medium having computer readable and executable code for instructing a processor to perform a method that includes: maintaining a first cash account, owned by a financial service provider (FSP), at a partner bank; maintaining a second cash account, owned by a financial institution, at the partner bank; invoking an application programming interface (API) for transfer of funds between the financial institution and the partner bank; and accomplishing instant funds transfer between the partner bank and the financial institution via the API and internal transactions in the partner bank between the first cash account and the second cash account.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a system diagram illustrating a system for financial transactions in accordance with an embodiment of the present invention.

[0012] FIG. 2 is a system diagram illustrating a transaction in a system for financial transactions in accordance with an embodiment.

[0013] FIG. 3 is a system diagram illustrating operation of a system for financial transactions in accordance with an embodiment.

[0014] FIG. 4 is a flow chart illustrating a method for funds transfer in a system for financial transactions in accordance with an embodiment.

DETAILED DESCRIPTION

[0015] Embodiments of the present invention relate to providing a global network for instant transfer of funds between financial institutions that enables immediate, or “real-time”, funds transfers between financial institutions (e.g., banks) regardless of whether the banks are in the same country or different countries. For brevity “bank” has been used for the

more general term “financial institution” (FI) in the illustrative examples that follow, but no limitation of financial institutions only to banks is intended unless specifically stated. “Instant” means the payment transaction is not subjected to any waiting period; the transactions are settled as soon as they are processed, comparable to real-time settlement systems such as RTGS. Transactions conducted using the instant global funds transfer network according to one or more embodiments may be more economical for use by individuals than RTGS systems yet provide faster settlement than transactions that clear through SWIFTNet.

[0016] For example, the RTGS system is suited for low-volume (e.g., less than a hundred per day per institution), high-value (e.g., more than \$10,000) transactions. RTGS systems are an alternative to systems of settling transactions at the end of the day, also known as net settlement systems, for example, Automated Clearing House (ACH) or SWIFTNet. In a net settlement system, all the inter-institution transactions during the day are accumulated. At the end of the day, the accounts of the institutions are adjusted.

[0017] A system according to one or more embodiments may be more convenient for users than a typical net settlement system. For example, transactions may be conducted on-line rather than the user having to walk up to a bank counter or teller window; the funds recipient may receive funds right away so that the user’s transaction may be completed more quickly; and errors may be detected and corrected right away instead of taking perhaps as long as a week to correct, as in some conventional systems, during which time neither the user nor the recipient may have use of the money. For banks or financial institutions, the faster service provided by an embodiment may allow the bank to charge more for the faster service than for a conventional net settlement system funds transfer. Also, suitability for low-value funds transfers using an embodiment may lead to wider usage than that of RTGS, increasing volume of business for the bank providing the faster service.

[0018] FIG. 1 illustrates a system 100, according to one embodiment, for facilitating financial transactions, e.g., transactions involving money in any of its various forms supported by system 100, in which a buyer 102 and seller 104 may wish to conduct a transaction 106, which may include sending money from buyer 102 to seller 104. Buyer 102 may be able to use any of several different mechanisms for sending money from an account at a bank (or other financial institution or financial service provider), for example, of the buyer 102 to seller 104 for accomplishing transaction 106. For example, buyer 102 may use an eCheck 108, an integrated electronic fund transfer (iEFT) 110, or a manual electronic funds transfer (mEFT) 112 to fund the transaction 106. Note that buyer and seller are used as an example, as any payer and payee may use features herein to effect instant money or fund transfers.

[0019] Using eCheck 108, buyer 102 may perform a credit/debit transaction that is similar to the use of a regular bank check, generally familiar to most people. Like a regular bank check, an eCheck 108 may be settled using the Automated Clearing House (ACH) network and may generally take 3 to 5 business days to clear, e.g., to be settled, meaning that the bank account of the recipient, also referred to as “creditor”, e.g., seller 104, has been credited (recipient has full use of the money) and the bank account of the payer, also referred to as “debtor”, e.g., buyer 102, has been debited (payer no longer has use of the money). With eCheck 108 the money may be

paid to seller 104 from an account of buyer 102 by direct debit, which is a method of ACH collection in which the debtor, e.g., buyer 102, gives authorization to debit the account of buyer 102 upon the receipt of an entry issued by the creditor, e.g., seller 104.

[0020] A financial service provider (FSP) 120, such as PayPal, Inc. of San Jose, Calif., may provide a service (e.g., acting as an intermediary between buyer 102 and seller 104) that insulates buyer 102 from seller 104 by allowing completion of transaction 106 through the FSP 120 via transaction 122, between buyer 102 and FSP 120, and transaction 124, between seller 104 and FSP 120, as shown in FIG. 1. For example, FSP 120 may provide an eCheck 108 transaction in which buyer 102 sends money to FSP 120, and FSP 120 may then send the money to seller 104 via using a transaction 124 between FSP 120 and seller 104 that is agreeable to both parties. In this way, information need only pass between seller 104 and FSP 120 without seller 104 needing to know any financial information about buyer 102. Using this eCheck service, buyer 102 may give authorization to debit the account of buyer 102 upon the receipt of an entry issued by the FSP 120. The authorization may be enabled, for example, by buyer 102 providing the FSP 120 with appropriate information about the bank and account of buyer 102.

[0021] Returning to FIG. 1, using iEFT 110, buyer 102 may perform an integrated electronic fund transfer through the FSP 120. To use the iEFT service provided by FSP 120, buyer 102 may or may not provide the FSP 120 with appropriate information about the bank and account of buyer 102. Using this iEFT service, the buyer 102 may initiate the transaction 106 on a website of FSP 120 and the buyer 102 may be redirected to an on-line banking web page of the bank of buyer 102, Bank A. Buyer 102 may log on to Bank A at the on-line banking web page, and Bank A may provide buyer 102 the capability to confirm the payment and the amount. Once the buyer 102 confirms the payment and amount, the FSP 120 may receive instant payment verification, e.g., the payment is approved, authorization is completed, and it may be guaranteed to FSP 120 to receive payment within, for example, 2 to 3 days. At that time, because the money is deemed safe, FSP 120 may make immediate payment to the seller 104, e.g., release the funds or credit the funds to the seller 104.

[0022] Referring again to FIG. 1, using mEFT 112, buyer 102 may perform a manual electronic funds transfer through the FSP 120. To use the mEFT service provided by FSP 120, buyer 102 may or may not provide the FSP 120 with appropriate information about the bank and account of buyer 102. Using this mEFT service, the buyer 102 may provide FSP 120 with funds to be kept with FSP 120 in a user account of buyer 102. In effect, funds for the transaction 106 will be prepaid into an account with FSP 120 by the buyer 102. Having prepaid appropriate funds to FSP 120 (e.g., via transaction 122), buyer 102 may initiate the transaction 106 on a website of FSP 120. FSP 120 may then send the money to seller 104 using an appropriate method for accomplishing transaction 124. In this way, information need only pass between seller 104 and FSP 120 without seller 104 needing to know any financial information about buyer 102. With mEFT, as with iEFT, because the money is deemed safe, FSP 120 may make immediate payment to the seller 104, e.g., release the funds or credit the funds to the seller 104.

[0023] Returning again to FIG. 1, seller 104 may have several options for receiving the money sent by buyer 102 in

transaction **106** from FSP **120** and putting the money into a bank account of seller **104**. In one option, the seller **104** may maintain a seller account with FSP **120**. Once the FSP **120** has provided the money from transaction **106** to the FSP seller account of seller **104**, seller **104** may then withdraw the money (withdrawal **111**) from the FSP seller account and, for example, deposit it with the bank of seller **104**, Bank B.

[0024] FSP **120** may provide financial services that allow instant fund transfers, e.g., fund transfers in real time—such as those accomplished by RTGS systems—but adapted to low value transfers—such as those accomplished by SWIFTNet or ACH transfers. The instant fund transfers may, however, be provided more economically than by RTGS and more quickly than by SWIFTNet. Some of the financial services are illustrated in FIG. **1** as an instant top-up **114**, an instant account confirmation (using withdrawals) **115**, an instant direct debit **116**, and an instant funds out (withdrawal) **117**.

[0025] FIG. **2** illustrates a portion of system **100** for facilitating financial transactions according to one embodiment. Financial service provider **120** may provide system **100** as a bank-to-bank fund transfer network to which Bank A and Bank B belong, enabling instant or real-time transfer transaction **106** between Bank A and Bank B. The network of system **100** may be global, and Bank A and Bank B may be in the same or different countries. Transaction **106** may occur from a user (e.g. buyer **102** or ultimate debtor) of Bank A and a user (e.g., seller **104** or ultimate creditor) of Bank B, and in the case that user **104** is identical to user **102** it may be understood that user **102** is thus able to transfer money between his or her own accounts at different banks using system **100**.

[0026] Bank A may offer interbank, instant funds transfers for banks in the network of system **100** as a product through on-line banking. A user (e.g., buyer **102** or ultimate debtor) having an account at Bank A may, for example, log on to an on-line banking web page of Bank A, and choose the global instant funds transfer service. The buyer **102** may then be presented, for example, with a drop down list of banks in the network of system **100** to which a transfer can be made. Upon the buyer **102** providing enough information (e.g., transfer amount, destination bank, destination account number, or seller **104** identification), Bank A may invoke an application programming interface (API) **151** to accomplish the transfer transaction **106**. API **151**, as well as APIs **152**, **153**, and **154**, may be pre-defined such as ISO 20022 “FIToFICreditTransfer”. API **151** may communicate with API **152** for performing transaction **122**. Based on the information received by API **152** from Bank A, API **152** may chain to API **153** to communicate with API **154** at Bank B to perform transaction **124** so that transaction **106** between user **102** and user **104** may be completed. By chaining APIs in this manner, FSP **120** may form the network of system **100** and enable instant global interbank funds transfer via the network of system **100**.

[0027] As seen in FIG. **2**, transfer transaction **106** may be completed in several steps or links through FSP **120**, which may be transparent to user **102** and user **104** as indicated by the dashed line representing transaction **106** in FIG. **2**. In other words, user **102** may perceive that user **102** only needs to deal with Bank A in order to accomplish the entire transaction **106**, without user **102** being aware of FSP **120** or partial transactions **122** and **124**. On the other hand, Bank A may display, for example, on its on-line banking webpage that enables use of the funds transfer service, a trademark or logo of FSP **120** to indicate affiliation of the network of system **100**

or the funds transfer service provided by Bank A with FSP **120**. Such information may be displayed by Bank A for purposes of using the good will associated with the name of FSP **120** in encouraging trust of user **102** in system **100** and the funds transfer service provided by Bank A.

[0028] FIG. **3** illustrates an example of various operations of system **100** for financial transactions. In system **100**, according to one or more embodiments, instant bank funds transfers can be made, on behalf of various users, between financial institutions, which in the example of FIG. **3** are illustrated by banks Bank A, Bank B, and a partner bank **121** of FSP **120**. Users may be different users of the same or different banks, for example, or the same user may wish to transfer funds between that user’s own accounts at different banks. As shown in FIG. **3**, Bank A may be a bilateral bank, meaning there is an established bilateral relationship between Bank A and FSP partner bank **121**. FSP partner bank **121** may provide a hosting service for cash accounts, e.g., business checking accounts, some of which are owned by banks in the system **100**, e.g., Bank A cash account **172** owned by Bank A, and some of which are owned by FSP **120**, e.g., FSP cash account **182**.

[0029] For example, if a user of Bank A wishes to transfer money to a user of Bank B (e.g., transaction **106** shown in FIGS. **1** and **2**), the Bank A user may so instruct Bank A and Bank A may begin a transaction **171** for transfer of funds using API **161** and API **162** to move funds (e.g., transfer **185**) from the user’s account at Bank A to Bank A’s cash account **172** at FSP partner bank **121**. FSP partner bank **121** may then make an internal transfer **181** of funds between Bank A’s cash account **172** and FSP cash account **182**. FSP partner bank **121** may use cash accounts **172**, **174**, and **182**, by which multiple transactions—such as transfers **181**, **183**, and **185**—are netted to maintain an aggregate balance for each cash account. The financial institutions in system **100**, e.g., Bank A and FSP partner bank **121**, may use a due to-due from accounting model for operating the network of system **100**. Due to-due from accounts (as opposed, e.g., to transfer accounts) generally are similar to liability accounts in that they appear on the Balance Sheet of year-end statements and maintain a balance at the end of the year that is carried forward to the next year. This type of account is usually used for transferring money between companies. By way of contrast, transfer accounts generally are similar to expense accounts in that their balance is closed into the fund balance account at the end of the year and they appear on the Income Statement. This type of account is usually used for balancing transactions across funds.

[0030] Continuing the example (e.g., transaction **106** shown in FIGS. **1** and **2**), subsequent to internal transfer **181**, the funds transfer from the user of Bank A to the user of Bank B (which may be the same or a different user) may be completed via internal transfer **183** to Bank B’s cash account **174** and transfer **187** (accomplished, e.g., via transaction **173**) to the account of the user of Bank B at Bank B. Transaction **173** may be made using API **164** and API **163**.

[0031] The overall transfer from the user of Bank A to the user of Bank B (e.g., transaction **106** shown in FIGS. **1** and **2**) may be completed instantly because: 1) transfer **181** and transfer **183** are internal funds transfers of FSP partner bank **121**, 2) transfer **185**, occurring between Bank A and its own cash account **172** with FSP partner bank **121**, may be accomplished by properly crediting and debiting the appropriate accounts via the use of API **161**, API **162**, and transaction **171**,

and 3) transfer **187** may be accomplished, like transfer **185**, by properly crediting and debiting the appropriate accounts via the use of API **164**, API **163**, and transaction **173**, without actual movement of funds between Bank B and its own cash account **174** at FSP partner bank **121**.

[0032] To facilitate immediate settlement of transactions (e.g., transaction **106** shown in FIGS. **1** and **2**), each financial institution (e.g., Bank A and Bank B) and the FSP **120** may take steps to ensure that each cash account in the FSP partner bank **121** maintains a large enough balance for settlement of a few days of transactions on a total aggregate basis. For example, FSP **120** may make funds transfers **189**, and Bank A and Bank B may make funds transfers **185** and **187** respectively. Thus, at the end of each day, FSP **120** may issue fund transfer instructions to FSP partner bank **121**; for example: “Today there is net \$1,000,000.00 transaction payment amount from Bank A cash account to FSP cash account hosted by FSP partner bank.” Because both cash accounts are hosted by the same bank, e.g., FSP partner bank **121**, the instruction is satisfied by an intrabank account loop transfer. An intrabank loop transfer is instant. For example, error reporting can take place immediately, e.g., if any cash account has an insufficient balance. Thus, transactions, such as funds transfer transaction **106**, may be settled immediately, e.g., do not take a number of business days to clear as with a conventional transfer made using, for example, SWIFTNet or ACH.

[0033] System **100** may be scalable in the sense that a new bank (or financial institution) may be integrated into the system in practically short amount of time so that the system can grow by hundreds to thousands of new financial institutions within a moderate time horizon, for example, 100 new banks within a year rather than 1 year for each new bank.

[0034] For example, integrating Bank B into system **100** may require setting up Bank B’s cash account **174** to be hosted by FSP partner bank **121** for facilitating intrabank loop transfers **183**. Open APIs, that is, APIs defined by ISO rather than the FSP **120**—such as ISO 20022 APIs “FIToFICredit-Transfer”—may be used so that not only the FSP **120** can implement and host appropriate APIs, but the new financial institution, e.g., Bank B for this example, can also invoke and host the appropriate APIs; thus, API invocation is bi-directional. With such an approach, integration of a new bank, e.g., Bank B, may require only configuring pre-defined APIs, e.g., configuring API **163** and API **164** for performance of transactions **173**. Configuring the open APIs can save significant amount of product development time (e.g. up to about one year in each case) that would otherwise conventionally be required on the part of FSP **120** on a customized basis for each new financial institution.

[0035] FIG. **4** illustrates a method **400** for transferring funds instantly in a global financial network such as system **100** according to one embodiment. At step **401**, a user (e.g., buyer **102**) may log in to the user’s account at a financial institution (e.g., Bank A) using, for example, on-line banking provided by Bank A. For this example, the user may wish to move funds from an account with Bank A to an account at Bank B, so the transaction may be instant transfer of funds from the user’s (e.g., buyer **102**) account with Bank A to the account of a user (e.g., seller **104**) at Bank B. The user may choose the transaction to perform at the on-line banking web page of Bank A and may provide additional choices and information—such as selecting Bank B from a drop down list of available banks that belong to the instant global funds transfer network of system **100**. A bank may be available, for

example, if the bank has been integrated into instant global funds transfer network of system **100** by FSP **120** and the bank has a cash account hosted by FSP partner bank **121**, as shown in FIG. **3**. At the end of the day, if the transaction is the only one for Bank A, that may be the only fund transfer issued to FSP partner bank **121** in that case; otherwise, several transactions may be netted against each other and an aggregate fund transfer issued to FSP partner bank **121** at the end of the day.

[0036] On day 1, in real-time, at step **402**, FSP **120** may receive the credit transfer API invocation from Bank A to transfer \$100 (in this example, to illustrate that some specific amount of funds is chosen by the user, \$100 is used as the chosen amount) of the user’s (e.g., buyer **102**) account balance to an account at Bank B. Because the API provides instant results, the money movement settlement is guaranteed, e.g., reliance by FSP partner bank **121** on availability of funds in Bank A cash account **172** is safe. Using the information, FSP **120** may sequence the invocations of API **162** and API **164** to accomplish the complete transaction of transferring funds from Bank A to Bank B which may be described as chaining the transactions **171** and **173** or chaining the APIs for transactions **171** and **173**. For example, FSP **120** having information from API **162** that transfer to Bank B is requested, may invoke API **164** and provide requisite information for completing the transfer of funds from Bank A to Bank B.

[0037] Upon receipt of the instructions via the API, at step **403**, FSP partner bank **121** may use internal cash accounts (e.g., a general ledger account) which is hosted inside the instant global funds transfer network of system **100** (e.g., hosted by FSP partner bank **121**) to credit the \$100 to the cash account **174** of Bank B via transaction **181** and transaction **183** using, for example, intrabank loop transfers. Bank B may then transfer the money from its own cash account **174** to the account of the Bank B user (e.g., seller **104**) at Bank B using, for example, funds transfer **187**. Thus, money may be credited to the Bank B user’s account at Bank B immediately (because money movement settlement is guaranteed) even though Bank B may wait the standard 3 to 5 days for settlement. Because Bank B can credit the funds immediately to the user’s account with Bank B, Bank B may release the funds immediately for completion of a transaction desired by the user of Bank A (e.g., buyer **102**). For example, Bank B may release funds immediately to seller **104**, who then may process the order of buyer **102** and proceed immediately, for example, to ship goods to buyer **102**.

[0038] In implementation of the various embodiments, embodiments of the invention may comprise a personal computing device, such as a personal computer, laptop, PDA, cellular phone or other personal computing or communication devices. The payment provider system may comprise a network computing device, such as a server or a plurality of servers, computers, or processors, combined to define a computer system or network to provide the payment services provided by a payment provider system.

[0039] In this regard, a computer system may include a bus or other communication mechanism for communicating information, which interconnects subsystems and components, such as processing component (e.g., processor, micro-controller, digital signal processor (DSP), etc.), system memory component (e.g., RAM), static storage component (e.g., ROM), disk drive component (e.g., magnetic or optical), network interface component (e.g., modem or Ethernet card), display component (e.g., CRT or LCD), input component

(e.g., keyboard or keypad), and/or cursor control component (e.g., mouse or trackball). In one embodiment, disk drive component may comprise a database having one or more disk drive components.

[0040] The computer system may perform specific operations by processor and executing one or more sequences of one or more instructions contained in a system memory component. Such instructions may be read into the system memory component from another computer readable medium, such as static storage component or disk drive component. In other embodiments, hard-wired circuitry may be used in place of or in combination with software instructions to implement the invention.

[0041] Logic may be encoded in a computer readable and executable medium, which may refer to any medium that participates in providing instructions to the processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. In one embodiment, the computer readable medium is non-transitory. In various implementations, non-volatile media includes optical or magnetic disks, such as disk drive component, volatile media includes dynamic memory, such as system memory component, and transmission media includes coaxial cables, copper wire, and fiber optics, including wires that comprise bus. In one example, transmission media may take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

[0042] Some common forms of computer readable and executable media include, for example, floppy disk, flexible disk, hard disk, magnetic tape, any other magnetic medium, CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, RAM, ROM, EPROM, FLASH-EPROM, any other memory chip or cartridge, carrier wave, or any other medium from which a computer is adapted.

[0043] In various embodiments, execution of instruction sequences for practicing the invention may be performed by a computer system. In various other embodiments, a plurality of computer systems coupled by communication link (e.g., LAN, WLAN, PTSN, or various other wired or wireless networks) may perform instruction sequences to practice the invention in coordination with one another.

[0044] Computer system may transmit and receive messages, data, information and instructions, including one or more programs (i.e., application code) through communication link and communication interface. Received program code may be executed by processor as received and/or stored in disk drive component or some other non-volatile storage component for execution.

[0045] Where applicable, various embodiments provided by the present disclosure may be implemented using hardware, software, or combinations of hardware and software. Also, where applicable, the various hardware components and/or software components set forth herein may be combined into composite components comprising software, hardware, and/or both without departing from the spirit of the present disclosure. Where applicable, the various hardware components and/or software components set forth herein may be separated into sub-components comprising software, hardware, or both without departing from the scope of the present disclosure. In addition, where applicable, it is contemplated that software components may be implemented as hardware components and vice-versa.

[0046] Software, in accordance with the present disclosure, such as program code and/or data, may be stored on one or more computer readable and executable mediums. It is also contemplated that software identified herein may be implemented using one or more general purpose or specific purpose computers and/or computer systems, networked and/or otherwise. Where applicable, the ordering of various steps described herein may be changed, combined into composite steps, and/or separated into sub-steps to provide features described herein.

[0047] The foregoing disclosure is not intended to limit the present invention to the precise forms or particular fields of use disclosed. It is contemplated that various alternate embodiments and/or modifications to the present invention, whether explicitly described or implied herein, are possible in light of the disclosure. Having thus described various example embodiments of the disclosure, persons of ordinary skill in the art will recognize that changes may be made in form and detail without departing from the scope of the invention. Thus, the invention is limited only by the claims.

What is claimed is:

1. A system comprising:

a first cash account managed by a computer at a partner bank of a financial service provider (FSP), wherein the first cash account is owned by the FSP;

a second cash account managed by a computer at the partner bank of the FSP, wherein the second cash account is owned by a first financial institution;

a third cash account managed by computer at the partner bank of the FSP, wherein the third cash account is owned by a second financial institution; and

a first application programming interface (API) and a second API for communication of financial transactions between the FSP and the financial institutions, wherein instant funds transfer between the partner bank and the financial institution is accomplished via the APIs and internal transactions between the first cash account, the second cash account, and the third cash account.

2. The system of claim 1, wherein:

the instant funds transfer is accomplished via a sequencing of the invocations of the first API and the second API.

3. The system of claim 1, wherein each APIs is a pre-defined API.

4. The system of claim 1, wherein the second API is a pre-defined API and the second API is configured for the second financial institution.

5. The system of claim 1, wherein each API is a pre-defined API defined according to an ISO 20022 standard.

6. The system of claim 1, wherein the internal transactions are intrabank loop transfers.

7. The system of claim 1, wherein the cash accounts are maintained according to due to-due from accounting.

8. A method comprising:

maintaining a first cash account, owned by a financial service provider (FSP), at a partner bank;

maintaining a second cash account, owned by a first financial institution, at the partner bank;

maintaining a third cash account, owned by a second financial institution, at the partner bank;

invoking a first application programming interface (API) for transfer of funds from the first financial institution and a second API for transfer of funds to the second financial institution; and

accomplishing instant funds transfer between the partner bank and the financial institution via the APIs and internal transactions in the partner bank among the first cash account, the second cash account, and the third cash account.

9. The method of claim **8**, further comprising:
 chaining the transfer of funds from the first financial institution and transfer of funds to the second financial institution by sequencing the first API invocation and the second API invocation.

10. The method of claim **8**, wherein the invoking step comprises invoking a pre-defined API.

11. The method of claim **8**, wherein the invoking step comprises:
 configuring a pre-defined API for the financial institution;
 and
 invoking the configured, pre-defined API.

12. The method of claim **8**, the invoking step comprises invoking a pre-defined API that is defined according to an ISO 20022 standard.

13. The method of claim **8**, wherein the accomplishing step comprises making intrabank loop transfers between the cash accounts.

14. The method of claim **8**, wherein the maintaining steps comprise maintaining the cash accounts according to due to-due from accounting.

15. A computer program product comprising a computer readable medium having computer readable and executable code for instructing a processor to perform a method, the method comprising:

maintaining a first cash account, owned by a financial service provider (FSP), at a partner bank;
 maintaining a second cash account, owned by a financial institution, at the partner bank;
 maintaining a third cash account, owned by a second financial institution, at the partner bank;
 invoking a first application programming interface (API) for transfer of funds from the first financial institution and a second API for transfer of funds to the second financial institution; and
 accomplishing instant funds transfer between the partner bank and the financial institution via the APIs and internal transactions in the partner bank among the first cash account, the second cash account, and the third cash account.

16. The computer program product of claim **15** wherein the method further comprises:
 chaining the transfer of funds from the first financial institution and transfer of funds to the second financial institution by sequencing the first API invocation and the second API invocation.

17. The computer program product of claim **15** wherein the method further comprises:
 configuring a pre-defined API that is defined according to an ISO 20022 standard for the financial institution; and
 invoking the configured, pre-defined API.

18. The computer program product of claim **15** wherein the internal transactions comprise intrabank loop transfers.

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